

## THE USES OF ALCOHOL

The Beverages Made by the Various Nations.

## THE TRICKS OF ADULTERATION.

The Malt Beer of South America—Cava Beer of the South Sea Islands—The Kums of the Tartars.

FOR THE SUNDAY HERALD.

There is no known people on earth, civilized, barbarous, or nomadic, black, yellow, or red, or of intermediate tints among whom intoxicating indulgences are not of common occurrence. And many and strange are the methods adopted to prepare the intoxicating beverages. In all preparations of the sort, ethyl alcohol—the commonest and most familiar member of the great alcohol tribe—is the basis. The name "alcohol" is itself of interest. There has been great diversity of opinion, and heated conflicts of ideas among students of language, as to the ancestry of the term. After winnowing away the chaff of philological contention, the grains of probability seem to be these:

It is said that long, long ago, before the arts of deception and trickery became extinct in the world, the women of Arabia practiced the habit of darkening the eyebrows and adorning their features generally by the use of a fine black powder, whereby they succeeded in enticing many a thoughtless Arab in their meshes of their borrowed fascinations. When the males of the tribe realized the deception, which they were learning made the dupes, they called the cosmetic of henna or the subtle thing. From this the Anglified form, alcohol, has sprung. It was long after this time that the name was applied to the product of the distiller's art; yet none can doubt the propriety of its use in this connection. The narcotics in which mankind are apt to indulge, are varied in their nature and effects; and the chemical bases by which their strange effects are wrought, are numerous, but all the stimulant beverages used for the purpose of creating the intoxicated state, depend for their subtle power upon the presence of alcohol.

The proportions of the chemically pure spirit—the poison itself—vary greatly in different preparations. Small beer and lager contain from 1/2 to 3 per cent. alcohol; cider, 3 or 6 per cent.; California wine, 7 per cent.; claret, 8 per cent.; hock, 14 per cent.; Port wine, 18 to 21 per cent.; whisky, 46 per cent.; brandy, 50 per cent., and rum, 58 per cent.

In South America, chicha or maize beer has long been known. Indeed the origin of its use is lost in the uncertain mists of the remote past. The way by which it is prepared is interesting, the usual mode of procedure being described as follows: In dried corn is moistened, left in a warm place till sprouted and then dried. This malt is crushed, mixed with water, and set aside to ferment; after fermentation, the stuff is stirred up, and drunk as a thick gruel. It is only among the inhabitants of the Sierra valleys that the strongest and indeed the most highly prized chicha can be procured.

The process of its manufacture, as given by an eye-witness, is essentially this. On brewing occasions, all members of a family gather around a large vessel in which is placed a considerable quantity of maize malt. Each one fills his mouth with the prepared corn and chews till the stuff is reduced to a mass of pulp; this he spits into the dish again, and forthwith resumes the masticating operation in another mouthful, and so on till sufficient pulp has been prepared. Hot water is poured on the unwinning mass, and fermentation is soon set up. For light chicha, a short time only is required to complete the process, but for the more exhilarating drinks, the jars containing the insalubrious mass are buried in the ground and left till their contents acquire the strength of venerable age. "Chicha," thus prepared, is called chicha mazada or chewed chicha, says an observer, "and is considered far superior to that prepared from maize crushed in the usual manner. The Serrano believes he cannot offer his guest a greater luxury than a draught of old chicha mazada, the ingredients of which have been ground between his own teeth."

The ana or cana beer of the South Sea Islands, and indeed of the islands of the Pacific generally, is prepared much in the same way. The ana of the Sandwich Islands, the Fijia and the Tongas are alike addicted to the use of the ana beverage. The drink is prepared from the root of the intoxicating plant pepper, which is taken from the earth and dried, and then chewed to a pulp; this is mashed in water and left to ferment. One traveler who has watched the preparation of ana seriously informs us that the only ones who are allowed to chew the root, are "young persons who have good teeth, clean mouths, and have no colds." Captain Wilkes humorously made a personal test of the merits of chira beer, and he states that the stuff tasted to him like a concoction of magnesia and rhubarb.

There is an interesting chemical explanation underlying this disgusting process of beer-making. Fermentation consists primarily in the partial decomposition of sugar, whereby alcohol is evolved. Starch and a closely allied substance called amylose exist in considerable quantity in the malted maize and the sugar beet root used in the manufacture of chicha and ana; and these materials in the fermenting process, become transformed first into sugar, then into alcohol. The saliva of the mouth exists a strong chemical influence in the changing from starch and dextrine to sugar, and this is its value in the fermenting operations already described.

Among the Tartars an intoxicating liquor is prepared by fermenting milk; this is known as kums. Mare's milk is preferred for the manufacture owing to its superior richness. The kums product is doubtless nourishing, containing as it does all the butter and cheese of the milk.

Sake is a Japanese drink prepared from fermented rice. It is generally drunk warm, and contains about 3 per cent. alcohol when new to 15 per cent. when of age. The beers generally are produced by the same general process. True indeed, no civilized nation or better culture upon the products of its own salivary glands to induce the fermenting changes. Yeast is generally employed as the ferment, and very specially is its action in decomposing sugar and forming alcohol. In all fermented liquors the proportion of alcohol is comparatively low. Even the wines which are produced by the fermentation of fruit juice rich in sugar, seldom contain more than 18 or 19 per cent. alcohol. Indeed, the presence of more than 20 per cent. is a tolerably sure proof that the liquors have been fortified, for that amount of alcohol is effectual in suspending the development of the yeast plants, and consequently in stopping farther fermentation. In the process of distillation, however, the volatile alcohol is easily separated from the fiery water, so that half an ounce of the distillate may contain the spirit from a gallon of fermented mash. It is this distilled product that possesses such ardent strength.

Alcohol is almost universally familiar, and no less wide is the sphere of the troubles induced by its use. Legislators have tried almost every conceivable plan for regulating the manufacture and sale of intoxicating liquors. The use of alcohol in the industrial arts is almost indispensable. Yet the laws that have been devised in order that the use of alcoholic beverages might be in some degree controlled, injuriously affect this legitimate use of the material. Alcohol cannot be produced even for purely technical purposes, except under expensive licenses. A rather novel way to avoid this difficulty has been proposed in Europe and the United States. It is commonly known that by the destructive distillation of wood there are produced large quantities of a volatile, ill-smelling substance known as wood naphtha. This, after long and tedious purifying operations, is sold as wood spirit, which, in its composition and general chemical behavior, is closely allied to common ethyl alcohol. A proposition has been made to mix alcohol with a certain proportion of crude wood naphtha, in

order to spoil the former for drinking purposes; and then to legalize the use of this mixture for industrial applications, without the burden of a license tax. From 5 to 10 per cent. of wood naphtha is sufficient to impart a most disgusting odor and taste to the spirit, and this can be removed only by prolonged chemical action, with repeated distillations. It would therefore be as difficult to purify such a mixture on a large scale, as it is under present circumstances to clandestinely ferment and distill spirituous liquors of any sort.

Though learned chemists have declared that such a mixture of alcohol and wood naphtha is disgustingly unpalatable, yet the craving tastes of many drunkards have been found to welcome even this sickening combination; so that the whole evil would not be removed even if such enactments should be made. Were it possible to procure alcohol at its proper value, many and rapid would be the improvements in applied chemistry. Is it not a matter for serious reflection and profound regret, that through the unsatiable appetites of men, the growth of science and the development of the useful arts have to be kept in check?

While considering the subject of foreign mixtures in alcoholic products, it should be remembered that there is perhaps no other class of substances amongst which the trickery of adulteration is as common as in this. A short time ago the municipal authorities of Paris ordered that all of the wines arriving in the city during a specified month should be tested by the excise officers. The official report showed that out of 1,518 samples examined, only sixty-five were found free from injurious additions; thus more than ninety-five per cent. were adulterated. At the International Medical Congress which assembled in Philadelphia in 1876, among many other conclusions relating to the dangers of alcoholic preparations, it was unanimously resolved that the purity of such liquors is not sufficiently assured to warrant their use as articles of medicine. In common malt beverages, alum and green vitriol are of frequent occurrence; and in distilled liquor, cayenne, cassia, cinnamon, alum and salts of tartar are often reported. The writer has tested a number of samples purchased in Salt Lake City, and his results convince him that the finding of a pure specimen of vinous or fermented liquor is an event worthy of careful remembrance.

In this day of temperance agitation and noisy enthusiasm against the liquor traffic, when so many modes of prosecution against offenders have been found wanting, why are liquor sellers so pressed against for dealing in adulterated articles? Legal action brought under the adulteration laws could scarcely fail of successful issue. Surely the undertaking is worth a try.

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DR. FOOTE IN SALT LAKE CITY. Dr. E. B. Foote, sr., author of "Plain Home Talk," "Medical Common Sense," "Science in Story," etc., of 129 Lexington avenue, New York, who has given his undivided attention for over thirty years to the treatment of difficult and supposed incurable chronic diseases, is at the Spencer house (north wing), No. 32 First East street, between Second and Third South streets, Salt Lake City. The doctor is here more with a view to rest and change of climate for a brief season than for professional business, but having in Utah and neighboring states and territories hundreds of patients and correspondents, he will for a limited time devote the hours from 9 until 12 a.m., and from 3 until 4 p.m. on Monday, Wednesday and Saturday to receiving the calls of the sick, or those who may desire his advice. Dr. Foote is too well known to need introduction to the public generally to require the publication of testimonials but if any one wishes endorsements of this nature they will be liberally supplied at the doctor's room. No charge for consultation not exceeding twenty minutes. Invalids at a distance may consult by letter.

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NOTICE. Certificate of deposit No. 25491, issued by the Deseret National bank, of Salt Lake City, August 13, 1889, for the sum of \$1,722.62 in my favor, has been lost, and all persons are hereby notified not to purchase the same, as payment has been stopped.

JOHN McKAY, Eleventh ward, SALT LAKE CITY, Nov. 6, 1889.

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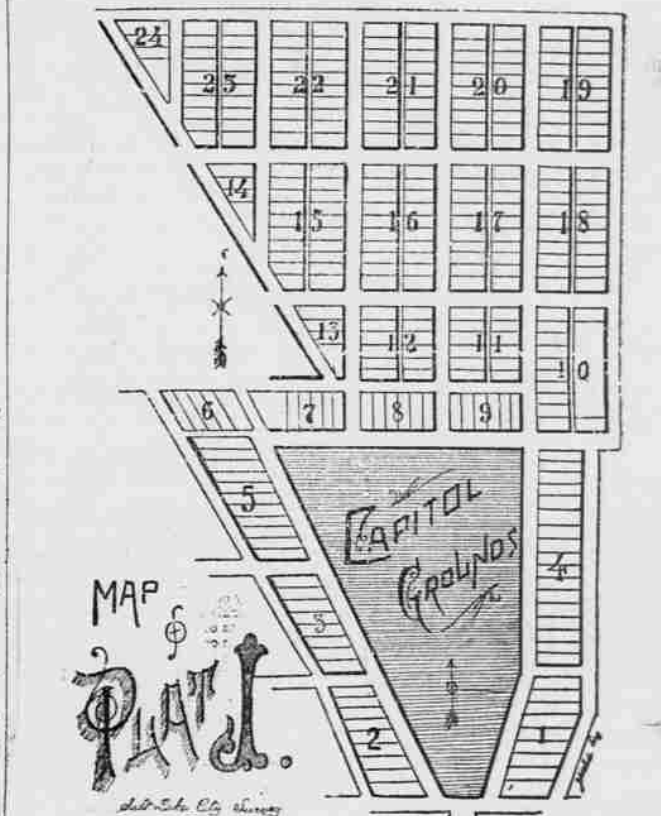
## GREAT PUBLIC SALE

OF

## CITY LANDS

In pursuance of a Resolution of the City Council of Salt Lake City, passed October 22, 1889, notice is hereby given that on Monday, the 9th day of December, 1889, at the front door of the City Hall in said City, I will offer for sale at public auction and will sell to the highest bidder for cash, the following described lands, belonging to Salt Lake City, which are situated in the city and county of Salt Lake and Territory of Utah, described as follows, to-wit:

All of lots 1, 2 and 4 in block 58; all of lot 4, block 57; all of lot 1, block 83; all of lot 2, block 119; all of blocks 128, 153, and 147; all of lot 4, block 161; all of lot 4, block 162; all of lot 3, block 157; all of lots 1, 3 and 4, block 158; all of lot 4, block 159; all of lot 1, block 163; all of block 145; all of lot 1, block 135; all of lots 2 and 3, block 136; all of lot 2, block 137; all of lots 1, 2 and 4, block 138; all of lot 4, block 116, all of lot 1, block 85, all of lot 3 block 86; all in plat D, Salt Lake City Survey; and all of plat J, excepting the east half of block 10 and the Capitol Grounds.



Said sale will commence at 10 o'clock a.m., and will be continued from time to time as circumstances may require. The lots in plat D, are all 165x165 feet and those in plat J range from 50x140 feet to 50x220 feet. For further information call at office No. 2, City Hall.

FRANCIS ARMSTRONG, Mayor of Salt Lake City. Salt Lake City, Utah, Oct. 23, 1889.